
Index

A

- access control. *See also* logon;
remote access
security, 219
- access control list (ACL), 18, 216.
See also security
- access problems, troubleshooting,
158–159
- access token, 216
- Accessibility Options, discussed,
76–77
- account lockout policy, 177
- ACL. *See* access control list
- ACPI. *See* Advanced
Configuration and Power
Interface
- activation. *See also* installation
product activation, 52
Windows XP, 52–53
- Active Directory, in general, 6
- Add Hardware Wizard. *See also*
hardware
discussed, 77–78
- Address Resolution Protocol
(ARP), TCP/IP and, 255, 275
- Administrative Tools, 80. *See also*
Control Panel
discussed, 97–100
- Administrator, set-up, 54
- Administrator account, 179
- Advanced Configuration and
Power Interface (ACPI), 84, 551
- Advanced Power Management
(APM), 551. *See also* power
management
- Advanced Power Options, 84
- Advanced RISC Computing
(ARC) pathname, 526
- alerts. *See also* logging
logging, 417–419
- answer file. *See also* installation
installation, 40
- API. *See* application program-
ming interface
- APM. *See* Advanced Power
Management
- applet, 74
- application, installation and
repair, 545–546
- application log, 572
- application management
assigning and publishing
applications, 471–472
in general, 467
Program Compatibility Wizard,
467–471
- application programming
interface (API), 16, 253
Telephony API, 83
- ARC. *See* Advanced RISC
Computing pathname
- architecture. *See also* print
subsystem architecture; system
architecture
in general, 15–16
memory architecture, 20
mode, 15
kernel mode, 15
user mode, 15, 16–17
Windows Open System
Architecture, 319
- ARP. *See* Address Resolution
Protocol
- ASR. *See* Automated System
Recovery
- Asynchronous Transfer Mode
(ATM), TCP/IP and, 256
- ATM. *See* Asynchronous
Transfer Mode
- audio. *See also* sound
Sounds and Audio Devices
applet, 86
- audit policy, 177

auditing
 discussed, 233–236
 Event Viewer, 233
 events, 233
 permissions, 145
 Author Mode, snap-ins, 97
 AUTOEXEC.BAT, virtual DOS machine, 458–460
 Automated System Recovery (ASR), 2, 549. *See also* recovery
 Autoplay, 10

B

backup. *See also* Backup utility; IntelliMirror; preventive maintenance
 application installation and repair, 545–546
 in general, 544–545
 folder redirection, 544
 PC configuration recovery, 545
 Backup utility, 546–549
 System State data, 548
 baseline. *See also* troubleshooting
 establishing, 402
 counters, 402
 objects, 402
 Basic Input/Output System (BIOS), 516
 Berkeley Software Distribution, 277

bindings, managing, 271–272
 BIOS. *See* Basic Input/Output System
 booting. *See also* Boot.ini file; installation; startup
 Advanced RISC Computing pathname, 526
 [boot loader], 35
 discussed, 519–522, 524–525
 boot phase, 516
 boot selection menu, 521
 hardware detection, 522
 power-on self test, 516–517
 bootable CD-ROM, 38–39
 dual-boot system, 35
 in general, 516
 BIOS, 516
 CMOS, 516
 hard drive boot partition, 115
 initial startup, 518–519
 boot partition, 519
 Master Boot Record, 518
 Ntldr, 519
 partition boot sector, 518
 system partition, 519
 load phase
 in general, 516, 528
 initializing kernel, 529–530
 loading kernel, 529

 logging on, 531
 services load, 530–531
 system startup, 531
 multiple operating systems, 35–36, 532
 multiple installation order, 532
 multiple-boot system, 34, 531–532
 network adapter, 44
 [operating systems], 525–526
 pre-boot execution environment, 556
 set-up boot floppies creation, 39
 troubleshooting, 522–524
 Boot.ini file, 36
 editing
 with Control Panel, 527
 in general, 527
 with text editor, 528
 bottlenecks. *See also* performance monitoring
 disk bottlenecks, 429
 in general, 427–428
 memory bottlenecks, 429–430
 network bottlenecks, 430–431
 processor bottlenecks, 430

C

Called Subscriber Identification (CSID), 388

camera, Scanners and Cameras applet, 85

CD burning, 155

certificate, 225

Check Disk utility, 133–134

CIF. *See* Computer Information File

CIFS. *See* Common Internet File System

client. *See also* user account

- domain client capability, 2
- printer, 362
- remote access component, 314, 316

Client Service for NetWare (CSNW), 264, 292. *See also* Novell NetWare

- file and print servers, 292
- Common Internet File System, 292
- NetWare Core Protocol, 292

installing and configuring, 294–297

- default tree assignment, 295
- other settings, 296–297
- preferred server vs. directory tree, 295–296

software selection, 298

supported utilities, 292

cluster, 121

CMOS. *See* complementary metal–oxide semiconductor

Common Internet File System (CIFS), 292

complementary metal–oxide semiconductor (CMOS), 516

Computer Information File (CIF), 568

Computer Management tool, 573–575

CONFIG.SYS, virtual DOS machine, 458–460

connectivity, support, 7

console, 95

context switch, system architecture, 453

Control Panel. *See also* Microsoft Management Console; System applet

- Accessibility Options, 76–77
- Add Hardware Wizard, 77–78
- Add or Remove Programs, 78–80
- Administrative Tools, 80
 - discussed, 97–100
- Date and Time, 80
- Display, 81
- editing Boot.ini file, 527
- Folder Options, 81
- Fonts, 82
- Game Controllers, 82
- Internet Options, 82
- Keyboard, 82
- Mouse, 82

Network Connections, 83

overview, 74–76

- applets, 74
- devices, 75
- services, 75

Phone and Modem Options, 83

Power Options, 83–84

Printers and Faxes, 84

Regional and Language Options, 84–85

Scanners and Cameras, 85

Scheduled Tasks, 85–86

Sounds and Audio Devices, 86

Speech, 86

System, in general, 86

System Applet, 424–427

Taskbar and Start Menu, 94

User Accounts, 94

control set, booting, 529

counter, 402

Counter log, 415. *See also* logging

credentials. *See also* security

- troubleshooting cached credentials, 201–202

CSNW. *See* Client Service for NetWare

Customize tab, media folders, 152–153

D

Data Link Control (DLC), 258

Data Sources (ODBC), 97, 98

- data types
 - binary, 490
 - DWORD, 490
 - enhanced metafile (EMF), 366
 - expandable string, 490
 - multi-string, 490
 - RAW, 366
 - Registry, 489
 - string, 490
 - date, applet, 80
 - DC. *See* domain controller
 - DCOM. *See* Distributed Component Object Model
 - DDE. *See* Dynamic Data Exchange
 - DDI. *See* Device Driver Interface
 - defragmentation, 128. *See also* hard drive
 - Disk Defragmenter, 134–135
 - fragmentation and, 134
 - demand paging, memory, 20
 - device, 75
 - printer, 362
 - Device Driver Interface (DDI), 365
 - Device Manager
 - in general, 88–91
 - DMA channel, 90
 - I/O port, 90
 - IRQ, 90
 - DFS. *See* Distributed File System
 - DHCP. *See* Dynamic Host Configuration Protocol
 - Digital Subscriber Loop (DSL), 313
 - disable, accounts, 179
 - disk. *See* hard drive
 - Disk Cleanup tool, 132–133. *See also* hard drive
 - Disk Management tool, 116. *See also* hard drive
 - Check Disk, 133–134
 - Defragmentation, 134–135
 - Disk Cleanup tool, 132–133
 - drive letters and mount points, 132
 - FAT/FAT32 folder object, 138–139
 - FSUTIL, 135–136
 - using, 124–131
 - Drivers tab, 127
 - General tab, 127–128
 - Hardware tab, 128–129
 - Policies tab, 126
 - Quota tab, 131
 - Security tab, 130
 - Sharing tab, 130
 - Tools tab, 128
 - Volumes tab, 126
 - display
 - Accessibility Options, 76
 - Control Panel applet, 81
 - Dualview, 81
 - Distributed Component Object Model (DCOM), IPC and, 262
 - Distributed File System (DFS), 159–160
 - DLC. *See* Data Link Control
 - DLL. *See* dynamic link library
 - DMA channel, 90
 - DNS. *See* Domain Name Server
 - domain client capability, 2
 - domain controller (DC), 14, 224
 - domain model, networking, 13, 14–15
 - Domain Name Server (DNS), TCP/IP and, 255
 - Domain Name Service (DNS), 340
 - TCP and, 279
 - domain security. *See also* security
 - in general, 216, 224
 - Kerberos and authentication services, 224–225
 - NTLM authentication, 225
 - Secure Socket Layer/Transport Layer Security, 225
 - Dr. Watson debugger, 587–588. *See also* troubleshooting
 - drive configurations
 - mirrored volume, 120
 - spanned volume, 120
 - striped volume, 120
 - drive letter, 114
 - mount points and, 117, 132
-

drivers. *See also* hardware
 device, 18
 device driver rollback, 549–550
 driver signing, 87–88
 installation, 77
 network, 18
 printer, 363
 discussed, 365
 virtual device drivers, 458

DSL. *See* Digital Subscriber Loop

Dynamic Data Exchange (DDE), 261

Dynamic Host Configuration Protocol (DHCP), 44, 254, 339
 TCP/IP and, 275

dynamic link library (DLL), 18
 conflict resolution, 473
 system architecture, 453

Dynamic Update, 40.
See also upgrade

E

e-mail, protocols, 254

EAP. *See* Extensible Authentication Protocol

EFS. *See* Encrypted File System

Emergency Repair Disk (ERD), 587. *See also* repairs

Encrypted File System (EFS), 2, 227
 discussed, 236–237

encryption. *See also* security
 data encryption, 328

Environmental Variables dialog box, 94

error. *See also* preventive maintenance; repairs
 Check Disk utility, 133–134
 System applet error reporting, 94

Ethernet, NWLink and, 290–292

Ethernet 802.3, 290

Ethernet II, 291
 TCP/IP and, 256

Ethernet SNAP, 291

event, 233, 407

Event Viewer, 97, 98, 233
 logging and, 419–420
 application log, 572
 security log, 572
 system log, 572
 troubleshooting, 572–573

Executive Services. *See also* networking models
 kernel mode, 17–19
 File System Manager, 19
 Internal Procedure Call Manager, 18
 Object Manager, 19
 Plug and Play Manager, 19
 Power Manager, 19
 Process Manager, 18
 system architecture, 448
 Virtual Memory Manager, 18
 Windows Manager, 19

Extensible Authentication Protocol (EAP), 328

Extensible Markup Language (XML), 3

F

FAT. *See* File Allocation Table

FAT32, 5, 120

discussed, 121–122

folder object, 138–139

mounted volume object, 143

fax

Printers and Faxes applet, 84

support, 387–389

FDDI. *See* Fiber Distributed Data Interface

FDISK utility, 51–52

Fiber Distributed Data Interface (FDDI), TCP/IP and, 255

file, offline, access, 155–157

File Allocation Table (FAT), 5, 120

discussed, 121–122

folder object, 138–139

mounted volume object, 143

file compression, 124

zipping and compressed files, 154

file name, long file names, 121

file sharing, Simple File Sharing, 154

file storage. *See* memory; storage

- file system
 - converting
 - file compression, 124
 - in general, 123
 - FAT, 5, 121–122
 - cluster, 121
 - file object, 141–142
 - folder object, 138–139
 - mounted volume object, 143
 - sector, 121
 - FAT32, 5, 121–122
 - file object, 141–142
 - folder object, 138–139
 - mounted volume object, 143
 - FSUTIL, 135–136
 - in general, 120–121
 - drive sharing, 120
 - IPC file system, 259
 - mailslots file system, 259–260
 - named pipes, 259
 - long file names, 121
 - managing shared folders, 149–152
 - NTFS, 5, 120, 122–123
 - folder object, 139–140
 - mounted volume object, 142–143
 - object level properties
 - in general, 136
 - NTFS folder object, 136–138
 - operating system and, 36
 - File System Manager,
 - kernal mode, 19
 - File Transfer Protocol (FTP)
 - discussed, 343
 - TCP and, 276
 - TCP/IP and, 254
 - Files and Settings Transfer Wizard, 202
 - flush, Registry, 501
 - Folder Options applet, 81
 - Folder Redirection, 157, 544
 - Fonts applet, 82
 - format, hard drive, 35
 - fragmentation, 134. *See also* defragmentation; hard drive
 - frame type, NWLink, 257
 - FTP. *See* File Transfer Protocol
- G**
 - Game Controllers applet, 82
 - GDI. *See* Graphical Device Interface
 - Graphical Device Interface (GDI), 364
 - discussed, 364
 - Groups. *See also* user account
 - local groups account, 176, 177
 - system groups, 190
 - user accounts and, 187–190
 - global groups, 188
 - Guest account, 179
- H**
 - HAL. *See* hardware
 - abstraction layer
 - handle, 404
 - hard drive. *See also* Disk Management tool
 - bottlenecks, 429
 - defragmentation, 128, 134–135
 - Disk Cleanup tool, 132–133
 - disk quota, 122
 - duplicating, 45–47
 - format, 35
 - partition, 35, 51–52
 - active partition, 51, 114
 - boot partition, 115, 519
 - destroying, 60
 - extended partition, 114
 - FDISK, 51–52
 - partition boot sector, 518
 - primary partition, 114
 - system partition, 115, 519
 - support, 7
 - troubleshooting, 585
 - hardware. *See also* drivers; hardware profile
 - computer preparation for upgrade, 13
 - detection, boot phase, 522
 - in general, 11
 - Hardware Compatibility List, 11
 - finding HCL, 11–12
 - HCL importance, 12
 - installation
 - Add Hardware Wizard, 77–78
 - troubleshooting, 577

- hardware abstraction layer (HAL),
kernel mode, 19–20
- Hardware Compatibility List
(HCL), 11
 - finding HCL, 11–12
 - HCL importance, 12
- hardware profile
 - System applet, 86
 - discussed, 91–92
- Help, 8
- hive, 489
- HKEY_CLASSES_ROOT, 494–495
- HKEY_CURRENT_CONFIG, 495–496
- HKEY_CURRENT_USER, 496
- HKEY_DYN_DATA, 497
- HKEY_LOCAL_MACHINE
 - in general, 491
 - HKEY_LOCAL_MACHINE\
 - HARDWARE, 491–492
 - HKEY_LOCAL_MACHINE\
 - SAM, 492
 - HKEY_LOCAL_MACHINE\
 - SOFTWARE, 493
 - HKEY_LOCAL_MACHINE\
 - SECURITY, 492–493
 - HKEY_LOCAL_MACHINE\
 - SYSTEM, 493–494
 - HKEY_USERS, 496–497
 - HOSTS file, TCP and, 278
 - hot fix, 588–590. *See also* repairs
 - HTML. *See* Hypertext Markup Language
 - HTTP. *See* Hypertext Transfer Protocol
 - Hypertext Markup Language (HTML), 3, 344
 - Hypertext Transfer Protocol (HTTP), 254, 344
 - I**
 - ICF. *See* Internet Connection Firewall
 - ICMP. *See* Internet Control Message Protocol
 - ICS. *See* Internet Connection Sharing
 - IEEE 802.X standard, 255
 - IIS. *See* Internet Information Server
 - input, I/O port, 90
 - input locale, Regional and Language Options applet, 84
 - input message queues, 456
 - installation. *See also* booting; startup
 - answer file, 40
 - automated installation, 41
 - answer files and UDFs, 43–44
 - unattended installation, 41–43
 - uniqueness database file, 41
 - booting multiple operating systems, 35–36
 - clean installation, 34
 - compared to upgrade, 34–35
 - multi-boot system, 34
 - options, in general, 40–41
 - planning, 36–37
 - Remote Installation Service, 44–45
 - set-up option differences, 39–40
 - Setup Manager Wizard, 43
 - SYSprep, 45–47
 - troubleshooting, 59, 577–578
 - types
 - bootable CD-ROM, 38–39
 - CD-ROM from OS, 39
 - CD-ROM from setup boot floppies, 38
 - in general, 37–38
 - installing over network, 38
 - set-up boot floppies
 - creation, 39
 - Windows Installer Service, 546
 - instance, performance object, 409
 - Integrated Services Digital Network (ISDN), 313
 - TCP/IP and, 256
 - IntelliMirror, 10, 544
 - Internal Procedure Call (IPC) Manager, 18
 - Internet Connection Firewall (ICF), 330
 - discussed, 340–342
 - Internet Connection Sharing (ICS), 330
 - discussed, 339–340
 - Internet Control Message Protocol (ICMP), TCP/IP and, 255, 275

Internet Explorer, 342

Internet Information Server (IIS), 2, 342, 383

discussed, 343–345

Internet Network Information Center (InterNIC), TCP/IP and, 257

Internet Options applet, 82, 337–339

Internet Printing Protocol (IPP), 383

Internet Protocol (IP)

in general, 272–274

subnet mask, 273

IPv6, 286–287

TCP/IP and, 255

Internet Protocol Security (IPSec), 2

IP Security policies, 228–229

Internet security, 238. *See also* security

Internetwork Packet Exchange (IPX), 290

network number, 291

InterNIC. *See* Internet Network Information Center

interprocess communication (IPC). *See also* network protocols

in general, 258–259

IPC file system

in general, 259

named pipes, 259

mailslots file system, 259–260

interprocess communication (IPC) programming interfaces

DCOM, 262

in general, 260

NetBIOS, 260

NetDDE, 261–262

RPC, 261

Win32 Internet API, 262

Windows Network interface, 262

Windows Sockets, 260–261

IP. *See* Internet Protocol

IPC Manager. *See* Internal Procedure Call Manager

IPC. *See* interprocess communication

IPCONFIG, TCP and, 280–281

IPP. *See* Internet Printing Protocol

IPSec. *See* Internet Protocol Security

IPX. *See* Internetwork Packet Exchange

IPX/SPX. *See* NWLink

IRQ, 90

ISDN. *See* Integrated Services Digital Network

K

Kerberos, 6

authentication services and, 224–225

Secure Socket

Layer/Transport Layer Security, 225

v5 authentication, 225

kernal mode. *See also* networking models

compared to user mode, 449–450

in general, 13, 17–20

key. *See also* Registry

Registry, 488

subkey, 488

Keyboard applet, 82

L

language

Regional and Language Options applet, 84–85

input locale, 84

laptop, optimizing performance, 433–434

Last Known Good Configuration (LKGC). *See also* booting; repairs

booting, 523

Registry, 503

Layer Two Tunneling Protocol (L2TP), 316

LFN. *See* long file name

LKGC. *See* Last Known Good Configuration

LMHOSTS file, TCP and, 279

Local Computer Policy

- administrative templates, 229
- computer configuration
 - in general, 227
 - public key policies, 227
- in general, 226
- IP Security policies, 228–229
- Secedit, 231–233
- User Configuration, 230–231

local procedure call (LPC), 453

lock out, accounts, 179

logging. *See also* logon; performance monitoring

- alerts, 417–419
- application log, 572
- Event Viewer, 419–420
- in general, 415–417
 - Counter log, 415
 - Trace log, 415
- security log, 572
- system log, 572
- transaction logs, 501

logon. *See also* logon authentication; Remote Access Service; security; user account

- access token, 216
- Administrator account, 179
- automated, 223
- automatic account lockout, 223
- customizing
 - adding security warning message, 221

- changing shell, 221–222
- disabling default username,
 - 221 disabling Shutdown button, 222
- in general, 219–220
- in general, 178–179
- Guest account, 179
- WinLogon process, 219

logon authentication, 178.

- See also* security
- discussed, 217–218
- security ID, 217
- shell, 217

long file name (LFN), 121

LPC. *See* local procedure call

M

mask, subnet mask, 273

Master Boot Record (MBR).

- See also* booting
- booting, 518
- troubleshooting, 586–587

MBR. *See* Master Boot Record

MCSE Certification Exam #70–270, 603–609

media folders, Customize tab, 152–153

memory. *See also* storage

- bottlenecks, 429–430
- support, 7
- virtual memory, 18, 86

Virtual Memory Manager, 17, 18

- page, 20

memory architecture, 20. *See also* architecture

memory space

- Win16–on–Win32
 - in general, 465
 - message queue, 466
 - separate and shared memory, 465–466
 - threads, 466
- Win32, 455–456

Microsoft Management Console (MMC). *See also* Control Panel

- in general, 95–96
 - snap-ins, 95, 96–97
- using, 97

Microsoft networking family. *See also* networking

- in general, 2
 - client operating systems, 3
 - operating systems, 2
- Windows XP family, 2–3

Microsoft references, for troubleshooting, 590

Microsoft Speech API (SAPI), 86

MMC. *See* Microsoft Management Console

modem, 313. *See also* Telephony API

- options, 334–336
- Phone and Modem Options applet, 83

monitor. *See* display

monitoring. *See* performance monitoring

mount point, drive letter and,
117, 132

mouse, Accessibility Options,
76–77

Mouse applet, 82

MPR. *See* Multi–Provider
Router

MS–CHAP, 328

MS–DOS, 4, 7. *See also* virtual
DOS machine

DOS operating environment, 457

Multi–Provider Router (MPR),
262, 264–265

Multiple Universal Naming
Convention Provider
(MUP), 262

multiprocessing, 3–4. *See also*
process

multitasking, 4

cooperative, 4

preemptive, 4

Win16, 463

multithreading, 4–5. *See also* thread

process, 5

threads, 4

Win32, 454–455

MUP. *See* Multiple Universal
Naming Convention Provider

N

named pipes, IPC, 259

NAT. *See* Network Address
Translation

NCP. *See* NetWare Core
Protocol

NDIS. *See* Network Device
Interface Specification

NDS. *See* Novell Directory
Services

NetBEUI. *See* NetBIOS
Extended User Interface

NetBIOS Extended User
Interface (NetBEUI), 258.
See also user interface

NetBIOS. *See* Network Basic
Input/Output System

NetDDE. *See* Network Dynamic
Data Exchange

NetWare Core Protocol
(NCP), 292

network. *See also* virtual private
network

bottlenecks, 430–431

components, 252–253

overview, 252

troubleshooting, 584–585

network access protocols. *See*
network protocols; Remote
Access Service

network adapter (NIC),
booting, 44

Network Address Translation
(NAT), 339

network authentication, 224

Network Basic Input/Output
System (NetBIOS), 254

IPC and, 260

network bridge, 269–270

Network Connections applet, 83

Network Device Interface
Specification (NDIS), 257, 289

Network Dynamic Data
Exchange (NetDDE), IPC and,
261–262

Network File System (NFS)
TCP and, 276

TCP/IP and, 255

network protocols. *See also* inter-
process communication

connectionless, 254

in general, 253

NetBEUI and DLC, 258

NWLink

advantages, 257

drawbacks, 258

in general, 257

remote access, 314, 317

Point-to-Point Protocol, 318

Point-to-Point Tunneling
Protocol, 318–319

PPP multilink protocol, 319

Serial Line Internet
Protocol, 319

TAPI, 319–320

TCP/IP

advantages, 254–257

drawbacks, 257

in general, 253–254

Network Setup Wizard, 270

networking. *See also* Microsoft
networking family;
networking models

bindings management, 271–272

discussed, 265–269

networking models

domain model, 13, 14–15

in general, 13

kernal mode

Executive Services, 17–19

in general, 13, 17

hardware abstraction layer,
19–20

kernal, 19

workgroup model, 13–14

New Technology File System
(NTFS), 5, 120. *See also*
file system

discussed, 122–123

Encrypted File System,
236–237

file object, 139–140

mounted volume object,
142–143

NTFS folder object, 136–138

NTFS object, copying and
moving, 149

permissions

basics, 148–149

file and folder permissions,
144–148

in general, 144

NFS. *See* Network File System

NIC. *See* network adapter

Notepad, Boot.ini file
editing, 528

Novell Directory Services
(NDS), 289

context, 293

NDS tree, 293

Novell NetWare, 288–289. *See also* Client Service for NetWare

bindery, 289

NDS support, 293–294

NetWare resources, connecting
to, 297–298

Novell Directory Services, 289

NWLink and, 289–291

NT LAN Manager (NTLM)
authentication, 225

NTFS. *See* New Technology
File System

Ntldr, booting, 519

NWLink, 253. *See also* network
protocols

advantages, 257

frame type, 257

configuring, Ethernet, 290–292

connectivity, 7

drawbacks, 258

in general, 257

installing, 290

IPX/SPX, 290

NetWare compatibility, in
general, 289–290

O

object, 402

performance object, 408, 409

security and, 218

synchronization objects, 455

object linking and embedding
(OLE), 261

Object Manager, kernal mode, 19

ODBC. *See* Data Sources

ODI. *See* Open Datalink
Interface

offline file, access, 155–157

OLE. *See* object linking and
embedding

Open Datalink Interface (ODI),
257, 289

operating system (OS), 2–3

booting multiple operating
systems, 35–36, 532

client operating systems, 3

file system and, 36

remote OS installation,
555–556

PXE environment, 556

[operating systems], booting,
525–526

Order Prints Online, 345

OS. *See* operating system

Outlook Express, 342

P

package, 471

Packet Internet Groper (PING)

TCP and, 277–278

TCP/IP and, 255

page, memory, 20

partition. *See* hard drive

password, 216

Password Policy. *See also* security

discussed, 194–195

user account, 177

PCMCIA Cards, 100

peer-to-peer network. *See* work-group model

performance monitoring. *See also* System Monitor;
troubleshooting

application priority settings,
422–423

boosting performance, 431–433

bottlenecks

disk bottlenecks, 429

in general, 427–428

memory bottlenecks, 429–430

network bottlenecks, 430–431

processor bottlenecks, 430

in general, 402–403

logging

alerts, 417–419

Event Viewer, 419–420

in general, 415–417

mobile user performance,
433–434

Performance Options, 421–422

System Applet

Advanced tab, 426–427

in general, 424

Visual Effects tab, 424–425

System Monitor

in general, 407

realtime monitoring, 408–415

Task Manager, 403–407

performance object, 408

instance, 409

permissions. *See also* security

NTFS

auditing, 145

basics, 148–149

file and folder permissions,
144–148

in general, 144

troubleshooting, 586

phone. *See also* modem

options, 334–336

Phone and Modem Options

applet, 83

photography, Scanners and

Cameras applet, 85

PID. *See* Process ID number

PING. *See* Packet Internet Groper

PKZIP, 154

Plug and Play (PnP) capability,
3, 77

Plug and Play (PnP) Manager,
kernel mode, 19

PnP. *See* Plug and Play

Point-to-Point Protocol (PPP),
remote access, 318

Point-to-Point Tunneling
Protocol (PPTP), 316

remote access, 318–319

port, I/O port, 90

POST. *See* power-on self test

power management

Advanced Configuration and
Power Interface, 551

Advanced Power
Management, 551

hibernate vs. standby, 551–552

Power Manager, kernel mode, 19

Power Options applet, 83–84

Advanced Configuration and
Power Interface, 84

Advanced Power Options, 84

power-on self test (POST), boot-
ing, 516–517

PPP Multilink, 315, 317

PPP multilink protocol

(PPP-MP), remote access, 319

PPP. *See* Point-to-Point Protocol

- PPP–MP. *See* PPP multilink protocol
 - PPTP. *See* Point-to-Point Tunneling Protocol
 - preventive maintenance. *See also* error; repairs; troubleshooting
 - Automatic Updates, 551
 - Desktop Cleanup Wizard, 551
 - device driver rollback, 549–550
 - hibernate vs. standby, 551–552
 - Windows File Protection, 550
 - print server, 363
 - managing, 384–385
 - print spooler
 - in general, 363, 364, 365–366
 - data types, 366
 - print monitor, 368–369
 - language monitor, 368
 - port monitor, 368
 - Printer Job Language, 368
 - print processor, 367–368
 - print provider, 366–367
 - print router, 366
 - starting and stopping, 386–387
 - print subsystem architecture. *See also* architecture
 - in general, 364
 - Graphical Device Interface, 364
 - printer driver, 365
 - Device Driver Interface, 365
 - printer. *See also* printing
 - configuring
 - Advanced tab, 377–380
 - Color Management tab, 380
 - Device Settings tab, 382–383
 - in general, 374
 - General Tab, 374–375
 - Ports tab, 376–377
 - Security tab, 380–382
 - Sharing tab, 376
 - installing and managing
 - in general, 371
 - local printer creation, 373
 - managing print jobs, 371–373
 - remote printer connection, 374
 - printer priority setting, 377
 - troubleshooting, 385–386, 578–581
 - World Wide Web and, 383
 - printer drivers, 363. *See also* drivers
 - discussed, 365
 - software, 369
 - Printer Job Language, 368
 - Printers and Faxes applet, 84
 - printing
 - across network, 370
 - mismatched documents, 378
 - process, 370
 - rendering, 364
 - terminology, 362–364
 - troubleshooting
 - in general, 385–386
 - network printing, 386
 - stopping and starting print spooler, 386–387
 - process, 404
 - multithread process, 454
 - multithreading, 5
 - system architecture and, 450–452
 - child process, 451
 - parent process, 451
 - Process ID number (PID), 404
 - Process Manager, kernel mode, 18
 - processor, bottlenecks, 430
 - profile
 - user account, 177
 - user profile, 177, 191–192
 - Program Compatibility Wizard, 467–471
 - publishing, application, 471–472
- ## R
- RARP. *See* Reverse Address Resolution Protocol
 - RAS. *See* Remote Access Service
 - recovery
 - PC configuration recovery, 545
 - Startup and Recovery Options, 93
 - system recovery, 7–8
-

- Recovery Console, 554–555
- redirectors
 - in general, 262–263
 - MPR, 262
 - Multiple Universal Naming Convention Provider, 262, 264
- Multi-Provider Router, 264–265
- Server service, 263
- Universal Naming Convention names, 264
- Workstation service, 263
- Regional and Language Options applet, 84, 84–85
- Registry, 487. *See also* Registry editors
 - fault tolerance, 501–503
 - HKEY_CLASSES_ROOT, 494–495
 - HKEY_CURRENT_CONFIG, 495–496
 - HKEY_CURRENT_USER, 496
 - HKEY_DYN_DATA, 497
 - HKEY_LOCAL_MACHINE
 - in general, 491
 - HKEY_LOCAL_MACHINE\HARDWARE, 491–492
 - HKEY_LOCAL_MACHINE\SAM, 492
 - HKEY_LOCAL_MACHINE\SOFTWARE, 493
 - HKEY_LOCAL_MACHINE\SECURITY, 492–493
 - HKEY_LOCAL_MACHINE\SYSTEM, 493–494
 - HKEY_USERS, 496–497
 - overview, 488–490
 - data type, 489
 - hive, 489
 - key, 488
 - subkey, 488
 - value, 488
 - value entry, 488
 - Resource Kit Registry Tools, 505
 - restoring, 503–504
 - Last Known Good Configuration, 503
 - storage files, 499–501
- Registry editors, 497–499
 - Reg, 497
 - Regedit, 497
- remote access. *See also* Remote Access Service
 - advanced connection setup
 - accepting incoming connections, 332–333
 - connecting to another computer, 333–334
 - client vs. server-based, 345
 - configuration, 320–321
 - connecting to Internet, 321–330
 - connecting to workplace network, 331–332
 - hardware installation, 334
 - phone and modem options, 334–336
 - security, 336–337
 - troubleshooting, 346
- Remote Access Service (RAS), 83. *See also* logon; network protocols
 - discussed, 314–315
 - features
 - Autodial and Log-on dial, 316
 - Callback security, 317
 - client and server enhancements, 316
 - idle disconnect, 316
 - look and feel, 317
 - PPP Multilink, 315
 - restartable file copy, 316
 - VPN protocols, 316
 - WAN connectivity, 317
 - troubleshooting, 581–584

Remote Assistance, 8
 discussed, 287–288

Remote Desktop, 2, 8, 287
 discussed, 288

Remote Installation Preparation (RIPrep), 556

Remote Installation Service (RIS). *See also* installation
 in general, 44–45, 556

Remote Procedure Call (RPC),
 IPC and, 261

repairs. *See also* preventive maintenance

 Emergency Repair Disk, 587

 emergency repair process, 555

 in general, 552

 hot fix, 588–590

 Recovery Console, 554–555

 remote OS installation,
 555–556

 service pack, 588–590

 System Restore, 552–553

Reverse Address Resolution Protocol (RARP), TCP/IP
 and, 255

RIPrep. *See* Remote Installation Preparation

RIS. *See* Remote Installation Service

router, Multi-Provider Router,
 264–265

RPC. *See* Remote Procedure Call

S

SAPI. *See* Microsoft Speech API

ScanDisk. *See* Check Disk utility

Scanners and Cameras applet, 85

Scheduled Tasks applet, 85–86

Secedit, 231–233

sector, 121

Secure Socket Layer/Transport Layer Security (SSL/TLS)
 certificate, 225

 Kerberos, 225

security. *See also* logon; Password Policy; permissions

 access control, 219

 access control list, 18, 216

 auditing, 233–236

 domain security

 in general, 216, 224

 Kerberos and authentication
 services, 224–225

 NTLM authentication, 225

 Secure Socket Layer/Transport Layer Security, 225

 in general, 6, 216

 access token, 216

 password, 216

Internet security, 238

local security policy

 Account Lockout Policy,
 195–196

 Audit Policy, 196

 in general, 193–194

 Password Policy, 194–195

 Security Options, 198–201

 User Rights Policy, 196–198

logon, adding security warning
 message, 221

logon authentication, 217–218

objects, 218

offline file access, 155–157

remote access, 314

 Callback security, 317

 discussed, 336–337

 user account, 177

 Local Security Policy tool, 187

Security Accounts Manager (SAM), Registry, 492

security log, 572

security reference monitor (SRM), 16, 18

Security tab, printer, 380–382

Sequenced Packet Exchange (SPX), 290

Serial Line Internet Protocol (SLIP), remote access, 319

server

 print server, 363, 384–385

 remote access component,
 314, 316

service, 75

- service pack, 588–590.
 See also repairs
- set up. *See also* booting;
 installation
 - boot disks, 38
 - in general, 53–54
 - Administrator, 54
 - GUI portion, 56–59
 - option differences, 39–40
 - text only portion, 54–56
- Setup Manager Wizard, 43
- settings, Files and Settings
 Transfer Wizard, 202
- SFC. *See* System File Checker
- Sharing tab
 - managing shared folders,
 149–152
 - using, 130
- shell, 217
 - changing, 221–222
- Shutdown button, disabling, 222
- Simple File Sharing, 154
- Simple Mail Transfer Protocol
 (SMTP)
 - TCP and, 276
 - TCP/IP and, 254
- Simple Network Management
 Protocol (SNMP)
 - TCP and, 277
 - TCP/IP and, 255
- Simple Object Access Protocol
 (SOAP), 3
- SLIP. *See* Serial Line Internet
 Protocol
- snap-ins, 95
 - discussed, 96–97
 - Author Mode, 97
 - User Mode, 97
- SNMP. *See* Simple Network
 Management Protocol
- SOAP. *See* Simple Object Access
 Protocol
- sound. *See also* audio
 - Accessibility Options, 76
- Sounds and Audio Devices
 applet, 86
- Speech applet, 86
- spooling. *See also* printer
 - printer, 363, 364
- SPX. *See* Sequenced Packet
 Exchange
- SRM. *See* security reference
 monitor
- SSL/TLS. *See* Secure Socket
 Layer/Transport Layer Security
- startup. *See also* booting
 - advanced options, 522–524
 - Taskbar and Start Menu, 94
- Startup and Recovery
 Options, 93
- storage. *See also* memory
 - basic storage, 114–115
 - extended partition, 114
 - primary partition, 114
- dynamic storage, 114, 115–119
 - volumes, 114, 115
- Registry storage files, 499–501
- removable media, 158
- support, 7
- string
 - expandable string, 490
 - multi-string, 490
- support services, 8
- SYSPREP. *See also* installation
 - installation, 45–47
- System Applet. *See also* Control
 Panel; performance monitoring
 - Device Manager, 88–91
 - driver signing, 87–88
 - Environmental Variables, 94
 - error reporting, 94
 - in general, 86
 - hardware profiles, 86
 - virtual memory, 86
 - hardware profiles, 91–92
 - performance tuning
 - Advanced tab, 426–427
 - in general, 424
 - Visual Effects tab, 424–425
- Startup and Recovery
 Options, 93

system architecture. *See also* architecture
 environment subsystem, in
 general, 448, 452–454
 in general, 448–449
 context switch, 453
 dynamic link library, 453
 Executive Services, 448
 local procedure call, 453
 subsystem, 448
 kernal vs. user mode, 449–450
 processes and threads, 450–452
 Win32 subsystem, 454
 System File Checker (SFC), 550
 System Monitor. *See also* performance monitoring
 in general, 407
 events, 407
 performance object, 408
 realtime monitoring, 408–415
 System Restore. *See also* recovery
 using, 552–553
 System State data, backup, 548

T

TAPI. *See* Telephony API
 Task Manager, 403–407
 process, 404
 TCP. *See* Transmission Control Protocol
 TCP/IP. *See* Transmission Control Protocol/Internet Protocol
 Telephony API (TAPI), 83. *See also* modem; phone
 remote access, 319–320
 Telnet, 342
 discussed, 343
 TCP and, 276
 template, administrative
 templates, 229
 Terminal Services, compared to Remote Access Service, 315
 text conferencing, 10
 TFTP. *See* Trivial File Transfer Protocol
 thread, 404. *See also* process
 multithreading, 4
 system architecture and, 450–452
 Win16–on–Win32 memory space, 466
 time, applet, 80
 Trace log, 415. *See also* logging
 transaction logs, 501
 transforms, 471
 Transmission Control Protocol (TCP). *See also* Transmission Control Protocol/Internet Protocol
 Berkeley R. utilities, 277
 discussed, 255
 Domain Name Service, 279
 File Transfer Protocol, 276
 in general, 275–276
 HOSTS file, 278
 IPCONFIG, 280–281
 LMHOSTS file, 279
 Packet Internet Groper, 277–278
 Simple Mail Transfer Protocol, 276
 Simple Network Management Protocol, 277
 Telnet, 276
 Trivial File Transfer Protocol, 278
 User Datagram Protocol, 276
 Windows Internet Naming Service, 279–280
 Transmission Control Protocol/Internet Protocol (TCP/IP)
 advantages, 254–257
 architecture
 Address Resolution Protocol, 275
 Dynamic Host Configuration Protocol, 275
 in general, 272
 Internet Control Message Protocol, 275
 Internet Protocol, 272–275
 configuration, 282–286
 connectivity, 7
 discussed, 253–254
 drawbacks, 257
 TCP/IP command line tools, 281–282

- Transmitting Subscriber Identification (TSID), 388
 - Trivial File Transfer Protocol (TFTP)
 - TCP and, 276, 278
 - TCP/IP and, 255
 - troubleshooting. *See also* performance monitoring; preventive maintenance; repairs
 - access problems, 158–159
 - booting, 522–524
 - cached credentials, 201–202
 - DLL conflicts, 473
 - in general, 568
 - collect information, 568–570
 - use common sense, 570–571
 - hard drive, 585
 - installation, 59, 577–578
 - Microsoft references, 590
 - miscellaneous issues, 585
 - Dr. Watson debugger, 587–588
 - Master Boot Record, 586–587
 - permissions, 586
 - network, 584–585
 - printer
 - in general, 385–386, 578–581
 - network printing, 386
 - remote access, 346, 581–584
 - tools
 - Computer Management tool, 573–575
 - Event Viewer, 572–573
 - Wizards and Widgets, 575–576
 - TSID. *See* Transmitting Subscriber Identification
- U**
- UDF. *See* uniqueness database file
 - UNC. *See* Universal Naming Convention
 - uniqueness database file (UDF), 41
 - Universal Naming Convention (UNC), names, 264
 - UNIX, 15, 260, 261
 - updates, Automatic Updates, 551
 - upgrade
 - compared to installation, 34–35
 - computer preparation, 13
 - Dynamic Update, 40
 - WINNT32, 34
 - user account, 175. *See also* client; logon
 - discussed, 176–177
 - account lockout policy, 177
 - audit policy, 177
 - domain user account, 176
 - groups, 177
 - local groups, 176
 - local user account, 176
 - multiple-user systems, 177
 - password policy, 177
 - profile, 177
 - user profile, 177
 - Groups node, 187–190
 - Local Security Policy tool, 187
 - Local Users and Groups tool, 184
 - logon
 - Administrator account, 179
 - in general, 178–179
 - Guest account, 179
 - logon authentication, 217–218
 - managing
 - in general, 180
 - imported user account, 183
 - User Accounts applet, 181–184
 - security options, 177
 - system groups, 190
 - Users node, 184–187
 - User Datagram Protocol (UDP), 259
 - TCP and, 276
 - TCP/IP and, 254–255
-

user interface

- intelligent user interface, 8–10
- NetBIOS Extended User Interface, 258

user mode. *See also* kernal mode; networking models

- compared to kernal mode, 449–450
- in general, 15, 16–17
- snap–ins, 97

user name, disabling default username, 221

user profile, 177

- discussed, 191–192
- local profiles, 192–193
- roaming profiles, 193

User Rights Policy, 196–198.

See also security

V

value, 488

VDD. *See* virtual device driver

VDM. *See* virtual DOS machine

video conferencing, 10

virtual device driver (VDD), 458.

See also drivers

virtual DOS machine (VDM), 16, 454. *See also* MS–DOS AUTOEXEC.BAT and CONFIG.SYS, 458–460

components, 458

custom DOS environments, 460–463

in general, 457–458

- DOS operating environment, 457
- real mode, 458
- Win16 operating environment, 457
- virtual device drivers, 458

virtual memory, 18, 86. *See also* memory

Virtual Memory Manager (VMM), 17, 18

virtual private network (VPN).

See also network

- remote access, 331
- protocols, 316

VMM. *See* Virtual Memory Manager

VMS, 15

voice conferencing, 10.

See also audio

volume

- mirrored volume, 120
- spanned volume, 120
- storage, 114
- simple volume, 115
- striped volume, 120

W

WAN. *See* wide area network

WFP. *See* Windows File Protection

wide area network (WAN), remote access component, 314, 317

Win16, 7

- in general, 463
- multitasking, 463
- operating environment, 457
- well-behaved applications, 466–467
- Win16–on–Win32, 463
- components, 464–465
- memory space, 465–467
- Win16–on–Win32 (WOW). *See* Win16
- Win32, 7
- applications
- base priority, 456
- environment subsystem, 454
- input message queues, 456
- memory space, 455–456
- multithreading, 454–455
- critical section, 455
- synchronization objects, 455
- system architecture, 454
- Win32 Win32 Internet API, 262
- Windows 95, 2, 3
- Windows 98, 2, 3
- Windows 2000, 2, 3, 10
- Windows File Protection (WFP), 550
- Windows Installer Service (WIS), 546

- Windows Internet Naming Service (WINS)
 - TCP and, 279–280
 - TCP/IP and, 256
- Windows Manager, kernal mode, 19
- Windows Me, 2
- Windows Media Player 8, 10
- Windows Movie Maker, 10
- Windows .NET, 2–3
- Windows Network interface (Wnet), 262
- Windows NT, 2, 3
- Windows Open System Architecture (WOSA), 319
- Windows Sockets (WinSock), 260–261
- Windows for Workgroups, 2, 3
- Windows XP
 - activation, 52–53
 - MCSE Certification Exam #70–270, 603–609
 - removing
 - destroying partitions, 60
 - in general, 59–60
- Windows XP environment
 - Active Directory, 6
 - compatibility, 6–7
 - connectivity, 7
 - file systems, 5
 - FAT, 5
 - FAT32, 5
 - NTFS, 5
 - in general, 3
 - Plug and Play capability, 3
 - help and support services, 8
 - multiprocessing, 3–4
 - multitasking, 4
 - cooperative, 4
 - preemptive, 4
 - multithreading, 4–5
 - process, 5
 - threads, 4
 - new features overview, 10
 - remote capabilities, 8
 - security, 6
 - storage, 7
 - system recovery, 7–8
- Windows XP family, 2–3
- WINNT, 38. *See also* WINNT32
 - in general, 47–51
- WINNT32, 38
 - in general, 47–51
 - partitioning hard disk, 51–52
 - upgrade, 34
- WINS. *See* Windows Internet Naming Service
- WinZip, 154
- WIS. *See* Windows Installer Service
- Wnet. *See* Windows Network interface
- workgroup model, networking, 13–14
- World Wide Web (WWW), 344
 - printers and, 383
- WOSA. *See* Windows Open System Architecture
- WOW. *See* Win16
- WWW. *See* World Wide Web

X

- X.25 standard
 - Internet connection, 326
 - TCP/IP and, 256
- XML. *See* Extensible Markup Language